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Correspondence

COVID-19 pandemic and the need for objective criteria for ICU admissions



Sir,

As we are in the middle of the COVID-19 pandemic, many European and North American countries are hard hit by increasing death tolls. Condition is expected to be worst in developed countries with its widespread. With the increase in the influx of patients, hospitals all over the world are facing a crisis of essential equipment and manpower and thus a rational decision is required considering the resources available in the hospital. Early recognition of the patients who will require ICU admission and will benefit most from it is of utmost importance. For that triage of the patients admitted to the emergency department is needed. This warrants the formulation of a uniform criterion for admission to the intensive-care unit (ICU).

World Health Organization has advocated that patients hospitalized with COVID-19 require regular monitoring of vital signs and, where possible, utilization of medical early warning scores that facilitate early recognition and escalation of treatment of the deteriorating patient [1]. National Early Warning Score (NEWS) is a tool developed by the Royal College of Physicians which improves the detection and response to clinical deterioration in adult patients and is a key element of patient safety and improving patient outcomes. However, we propose a modification of NEWS for the triage of COVID-19 patients. Adjusted Na-

tional Early Warning Score (ANEWS) can be formulated by including age and comorbidities as independent parameters to NEWS (Table 1).

Age ≥ 65 years has been found to be an independent predictor of developing Acute Respiratory Distress Syndrome (ARDS), ICU admission and mortality in several studies [2–4]. Patients with comorbidities like hypertension, diabetes, chronic obstructive pulmonary disease (COPD), chronic kidney disease (CKD), and malignant tumors have been found to have significantly high mortality in patients with COVID-19 [3–5]. Moreover, patients with two or more comorbidities have significantly escalated risks of ICU admission, invasive ventilation, and mortality as compared with those who had single comorbidity, and even more so as compared with those without any comorbidity [5].

ANEWS would help as objective criteria for early recognition and escalation of treatment that can be used by less expertized health care workers (HCW) in the event of scarcity of HCWs. Moreover, when the number of critically ill people would outnumber the ICU beds, ANEWS can work as a useful tool for triage of the patients admitted to the emergency department. In such conditions, the patients with ANEWS ≥ 7 and lesser survival benefits like advanced malignancies and end stage organ failure should be given a lesser preference for ICU care.

Table 1
Adjusted National Early Warning Score (ANEWS) for COVID-19.

Parameters	3	2	1	0	1	2	3
Age				< 65		≥ 65	
Comorbidities (DM, HTN, COPD, CKD, Malignant tumors)				0	1	≥ 2	
Resp. rate (per minute)	≤ 8		9–11	12–20		21–24	≥ 25
Oxygen saturation (room air) %	≤ 91	92–93	94–95	≥ 96			
Oxygen supplement necessary		Yes		No			
Systolic blood pressure (mmHg)	≤ 90	91–100	101–110	111–219			≥ 220
Pulse (per min)	≤ 40		41–50	51–90	91–110	111–130	≥ 131
Consciousness				Alert			CVPU
Temperature ($^{\circ}\text{C}$)	≤ 35.0		35.1–36.0	36.1–38.0	38.1–39.0	≥ 39.1	

CEW Score	Clinical Risk	Frequency of monitoring	Response
0–4	Low	Minimum 4–6 hourly	Ward-based
≥ 3 in one parameter	Low medium	Minimum 1 hourly	Urgent ward-based response*
5–6	Medium	Minimum 1 hourly	Key threshold for urgent response*
≥ 7	High	Continuous	Urgent or emergency response**

Abbreviations: DM, diabetes mellitus; HTN, hypertension; COPD, chronic obstructive pulmonary disease; CKD, chronic kidney disease; CVPU, confusion, verbal pain unresponsiveness.

* Response by a clinician or team with competence in the assessment and treatment of acutely ill patients and in recognising when the escalation of care to a critical care team is appropriate.

** The response team must also include staff with critical care skills, including airway management.

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